

Application. No. 09/876,796  
Amendment dated July 16, 2005  
Reply to Office Action of February 16, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

Claims 1-26 (cancelled).

Claim 27 (currently amended): A method for providing antifreeze or recrystallization inhibition properties to a subject formulation comprising incorporating at least 0.1 micro gm to about 1 mg of an activated polypeptide into 1 mL of a subject formulation to obtain recrystallization inhibition or about 1 mg to about 25 mg of said activated polypeptide into about 1 mL of a subject formulation to obtain thermal hysteresis.

Claim 28 (original): The method according to claim 27, wherein said activated polypeptide provides a non-colligative freezing point depression and an antifreeze specific inhibition of recrystallization.

Claim 29 (original): The method according to claim 27, further comprising an enhancing activator species.

Claim 30 (original): The method according to claim 29, wherein said activator is an endogenous activator from *T. molitor* or Tm 12.86 antisera.

Claim 31 (original): The method according to claim 27, wherein said activated protein is incorporated into plant, produce or fish in an amount sufficient to provide antifreeze protection.

Claim 32 (original): The method according to claim 27, wherein said activated protein is incorporated into a region of a target tissue in an amount sufficient to provide antifreeze protein controlled limited tumor cell or target tissue cryoinjury during cryosurgery.

Claim 33 (original): The method according to claim 27, wherein said activated protein is incorporated into hypothermic solutions or bathing media to reduce cold damage in order to provide cryogenic or hypothermic preservation of cells and tissues by incorporating said protein into said cells, tissue, or cell membranes in a controlled amount sufficient to provide antifreeze protection.

Claim 34 (original): The method according to claim 27, wherein said activated protein is incorporated into de-icing formulations or used on surfaces to reduce existing ice buildup or abate the formation of ice buildup on surfaces.

Claim 35 (original): The method according to claim 34, wherein said surfaces comprise road, aircraft, household products, cosmetic products, machinery and plant surfaces.

Claim 36 (original): The method according to claim 27, wherein said activated protein is incorporated into a food product in an amount sufficient to provide antifreeze protection to improve the quality of food by abating freezing of solutions, freezer burn, or degradation due to cold storage.

Claim 37 (original): The method according to claim 27, wherein the polynucleotides for the activated protein are used to create transgenic or gene-modified plants, crops, fish, or animals having greater tolerance to cold climatization.

Claim 38 (withdrawn): Native endogenous Type III anti-freeze proteins from the Tenebrionoidea Superfamily.

Claims 39-40 (cancelled).